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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,124	07/18/2006	Bernd Hirthe	DNAG-322	7510

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EXAMINER	
SHEH, ANTHONY H	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
08/09/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

nyipdocket@fulbright.com

Office Action Summary	Application No.	Applicant(s)	
	10/580,124	HIRTHE ET AL.	
	Examiner	Art Unit	
	Anthony H. Sheh	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action follows a response filed June 8, 2010. Claims 16, 20, 23, 24, 25, 31, 34, 38 and 39 are currently amended. Claims 41 and 42 are newly filed. Claims 16-42 currently pending.

2. Claims 16, 25 and 31 were amended by importing the limitation of unamended claim 24 (dependent on claim 16) and/or unamended claim 39 (dependent on claim 31) which recites that the inorganic metal phosphate has Scherrer crystallite size from 0.001 to 2 microns. Claims 23, 24, 38 and 39 were amended to recite that the inorganic metal phosphate has Scherrer crystallite size of about 0.005 and 0.001 microns, respectively; the foregoing values are the low-value endpoints of the previously claimed ranges. Claim 20 was amended to remove a duplicate member of a Markush group. Claim 31 was amended to traverse an indefiniteness rejection by removing the broader scope of the claim. Claim 34 was amended to restrict the claimed metal phosphate to $Ca_3(PO_4)_2Ca(OH)_2$ which contains water of crystallization. The scope of claims 23-25 and 31-40 have been amended in a manner previously not presented. Claims 41 and 42 are newly presented and contain a limited subset of previous Markush groups (e.g. that of instant claim 20 removing the simple copper phosphate hydroxide compounds).

3. Applicant's amendments and arguments have been fully considered, but are not persuasive. The new grounds of rejection are necessitated by the discovery of prior art applicable to applicant's amended claim scope. Accordingly, this action is made FINAL.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Faber** et al., US 5,489,639 (hereafter '639), as evidenced by *Sigma-Aldrich Product Description 344400: Copper(II) hydroxide phosphate* and *GE Plastics Product Description: Valox© 325C.*

8. The discussion of '639, *Sigma-Aldrich*, and *GE* in paragraphs 9-11 and 17-29 of the Office action mailed March 8, 2010 is incorporated herein by reference. With respect to limitation that the inorganic metal phosphate have Scherrer crystallite sizes of 0.001 to 2 microns, or 0.001 microns, or 0.005 microns (claims 1, 23 and 24, respectively), attention is drawn to the previous discussion regarding the prior art disclosure of an embodiment wherein

90% of the particles have size less than 6 microns (col. 7, ln. 1-47). This feature of the prior art was previously elucidated in the aforementioned Office action.

9. It is well settled that where the prior art discloses an overlapping range, a *prima facie case* of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize copper(II) hydroxide phosphate particles have size less than 10 microns as directed by '639. Therefore claimed embodiments fall within the scope of the prior art. Absent a showing of criticality, the prior art range establishes a *prima facie* case of obviousness against the claimed Scherrer crystallite sizes.

10. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wisseborski** et al., DE 19543803 A1 (hereafter '803), in view **Faber** et al., US 5,489,639 (hereafter '639), as evidenced by *Sigma-Aldrich Product Description 344400: Copper(II) hydroxide phosphate* and *GE Plastics Product Description: Valox© 325C*.

11. The basis of this rejection is adequately set forth in paragraphs 19-22 of the Office action mailed March 8, 2010, and the discussion in paragraphs 7-9 *supra*, incorporated herein by reference.

12. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wisseborski** et al., DE 19543803 A1 (hereafter '803), in view **Faber** et al., US 5,489,639 (hereafter '639), as evidenced by *Sigma-Aldrich Product Description 344400: Copper(II)*

hydroxide phosphate and *GE Plastics Product Description: Valox© 325C*, in further view of **Pengilly**, US 4,408,004 (hereafter '004).

13. The basis of this rejection is adequately set forth in paragraphs 23-25 of the Office action mailed March 8, 2010, and the discussion in paragraphs 7-9 *supra*, incorporated herein by reference.

14. Claims 31-33 and 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Faber** et al., US 5,489,639 (hereafter '639), as evidenced by *Sigma-Aldrich Product Description 344400: Copper(II) hydroxide phosphate* and *GE Plastics Product Description: Valox© 325C*, in view of **Martens** et al. (Martens, W., Frost, R.L. *American Minerologist*, vol. 88, p. 37-46, 2005).

15. The basis of this rejection is adequately set forth in paragraphs 26-29 of the Office action mailed March 8, 2010, and the discussion in paragraphs 7-9 *supra*, incorporated herein by reference.

16. Claims 31-34 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mizutani** et al., US 3,953,565 (hereafter '565), as evidenced by **Shames**, US 2,222,882 (hereafter '882).

17. '565 discloses thermoplastic composition comprising a thermoplastic, e.g. polypropylene (col. 2, ln. 41) and a hydrated inorganic filler (col. 1, ln. 11). The filler is e.g. tricalcium phosphate (col. 3, ln. 12). As evidenced by '882, commerical grades of hydroxyapatite satisfying the chemical formula $Ca_3(PO_4)_2Ca(OH)_2$ are also known as "tertiary calcium phosphate" which suitably equates to tricalcium phosphate. At the very least, '882 provides evidence one of ordinary skill in the art considers the term "tricalcium phosphate" to be commensurate with the formula $Ca_3(PO_4)_2Ca(OH)_2$.

18. Regarding claims 31-35, the reference discloses that the hydrated inorganic filler has particle size of 0.01 to 200 microns (col. 3, ln. 26-27). It is well settled that where the prior art discloses an overlapping range, a *prima facie case* of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Moreover, embodiments of the inorganic filler tend to the low end of the foregoing range; the prior art discloses inorganic fillers having size of 0.04 microns, 5 microns, 10 microns, 3 microns, etc (Table 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize hydrated inorganic filler having particle size 0.01 to 3 microns. Accordingly, the Scherrer crystallite size would be on the same order, and thus the claimed crystallite size is met.

19. Regarding claim 40, the claimed IR absorption behavior is a function of the chemical composition of the claimed thermoplastic material, and ostensibly results from the inclusion of the claimed inorganic metal phosphates in the thermoplastic. Accordingly, since the thermoplastic material of '565 contains one of applicant's claimed metal phosphates, the property would be inherently present.

20. Claims 31-33 and 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Faber** et al., US 5,489,639 (hereafter '639), as evidenced by *Sigma-Aldrich Product Description 344400: Copper(II) hydroxide phosphate* and *GE Plastics Product Description: Valox© 325C*, in view of the *Handbook of Mineralogy* (Anthony, J.W. et al. *Handbook of Minerology*. Minerological Society of America, 2001).

21. The discussion of '639, *Sigma-Aldrich*, and *GE* in paragraphs 9-11 and 17-29 of the Office action mailed March 8, 2010, and paragraphs 7-9 *supra* is incorporated herein by reference. The cited references only disclose the use of libethenite, e.g. $Cu_2PO_4(OH)$.

22. The *Handbook of Mineralogy* discloses nissonite ($Cu_2Mg_2(PO_4)_2(OH)_2 \cdot 5H_2O$), zapatalite ($Cu_3Al_4(PO_4)_3(OH)_9 \cdot 4H_2O$), kipushite ($(Cu,Zn)_6(PO_4)_2(OH)_6 \cdot H_2O$), and veszelyite ($(Cu,Zn)_3(PO_4)(OH)_3 \cdot 2H_2O$), Notably, the foregoing minerals are all associated with libethenite, are similar in color (green) and opacity (translucent to transparent), and of similar chemical composition. Based on the foregoing similarities, of ordinary skill in the art at the time of the instant invention would have a reasonable expectation of success at utilizing these minerals as laser-marking pigments, as is true of the '639 libethenite. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize these minerals in the same fashion to form a laser markable composition.

Response to Arguments

23. Applicant's arguments filed June 8, 2010 have been fully considered but they are not persuasive. With respect to **Faber** et al., US 5,489,639 (hereafter '639), applicant misinterprets the prior art in concluding that the reference only discloses particles between 6 and 30 microns. The reference discloses both less than 10 microns, and the embodiment relied upon has 90% of the particles less than 6 microns. Since the foregoing ranges overlap the claimed ranges, a *prima facie* case of obviousness is established. Applicant dismisses **Martens** et al. (Martens, W., Frost, R.L. *American Minerologist*, vol. 88, p. 37-46, 2005) on the basis that the reference discloses no more than the IR absorption properties of natural copper phosphate minerals. However, given that these minerals fall within the scope of applicant's claims, and further have similar IR absorption as libethenite, as within applicant's claims (and '639), use of these

compounds to achieve a similar effect as result of their IR properties would have been obvious to one of ordinary skill in the art. The fact that the prior art does not disclose the IR/NIR behavior of thermoplastic comprising the copper phosphate hydroxide salts does is not relevant to patentability. "[T]he discovery of a previously unappreciated property of a prior art composition, or ofa scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). For at least the foregoing reasons, applicant's arguments are unpersuasive.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony H. Sheh whose telephone number is (571)-270-7746. The examiner can normally be reached on Monday thru Thursday, 9:30a to 3:30p.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan can be reached on (571)-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

29. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony H Sheh/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796